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ABSTRACT

Published to aid students in comprehending the philosophy of the Department of Outdoor Teacher Education at Northern Illinois' Taft Field Campus, this paper on bird banding encompasses: (1) a brief history of bird banding; (2) the rationale behind bird banding; (3) a description of the bird banding station at the Lorado Taft Field Campus and its history from 1956 to 1973, including a summary of the number and species of birds banded: (4) the types of traps used; (5) Taft's record keeping procedures, including exemplary forms; (6) an analysis of the Taft Station banding records; (7) statistics relative to the Taft birds found elsewhere; (8) the mortality rate of the birds banded at Taft; (9) statistics on bird migration patterns; (10) prevention of the harmful use of bird bands; (11) the population dynamics of Taft birds; (12) the yearly percentum of returns of the birds banded at Taft; (13) the longevity of birds; (14) the educational implications of banding activities; (15) suggestions for improvement of bird banding at Taft (e.g., promote annual workshops on bird banding; require a short course on bird banding for all graduate assistants at Taft; develop a color banding procedure; improve/standardize the weather station; prepare publications re: banding outcomes; promote sustained research; etc.); (16) a bird banding bibliography (7 periodicals, 2 catalogues, and 17 annotated book, article, and pamphlet citations). (JC)

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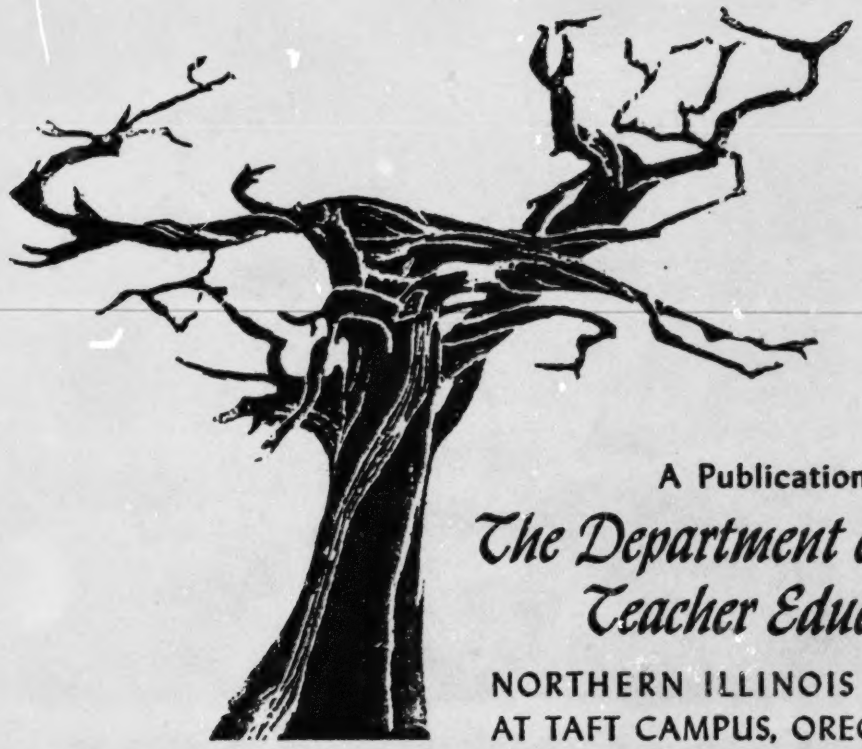

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2

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TAFT CAMPUS OCCASIONAL PAPER NO. 18

RINGED BIRDS: STORY OF BIRD BANDING AT THE LORADO TAFT FIELD CAMPUS 1956 - 1973

BY

Wayne Guptill and Douglas E. Wade

Published May 6, 1974

(Wayne Guptill served as a Graduate Assistant at the Taft Field Campus during the school year, 1973-74. As part of Education 503, he undertook a research project: An Analysis of Banding of Birds at Taft. His findings have been incorporated into this Taft Occasional Paper. Wayne is a native of New Brunswick, Grand Manan Island, and teaches Biology at Stanley High School, Stanley, New Brunswick.

Mr. Wade is on the teaching staff of Taft and has been in charge of bird banding at the Taft Station, 1964 - 1974.

This Paper has been published to aid students coming to Taft; hopefully to vision the larger truth that extends far beyond the mere activity of bird banding.)

(The authors wish to thank Miss Diane Bauer and Mrs. Bert Macauley for their noble efforts in getting this publication typed, stenciled and run.)

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To Start Where You Are ...

Every known creature and plant on Planet Earth has a name. This is also true of human beings. In the United States and Canada human beings have, in addition to a name, many other identification markers such as: a birth certificate (some include an infant footprint much like a fingerprint); a Social Security number; a numbered driver's license; a numbered bank book; or credit cards with numbers; and etc. Hospitals "tag" new born infants and many of the patients. Persons with certain ailments such as diabetes or with a rare blood type wear special markers on a necklace.

Cars, trucks, airplanes, and boats display special numbers or license plates. Most manufactured goods and food products are stamped with identifying numbers.

Some married couples wear wedding bands (rings) inscribed with their own initials and those of their mate. Books in libraries are cataloged in letter and number systems which perform a great service in keeping the books on the proper shelves and easily retrieved.

Indeed we see that this practice of "marking" is rather common. You will be able to think of many other ways in which things are tagged, marked, banded, or ringed for purpose of easier and more precise identification.

A Quick History of Banding Birds ...

In ancient times, many of the birds of prey trained by man to hunt for him, bore identifying markers. The famous bird artist, John James Audubon wrapped silver wire around the leg of some of the birds he had captured for purpose of studying them and painting their portraits. He was pleased to find a year later a few of the birds still wearing the silver wire. Other early efforts in band- or ringing birds are well described by Hickey, Lincoln, Welty and others (see reference list at end).

Today, bands are made of an aluminum alloy with various sizes calibrated to fit leg sizes of birds. In great Britain bands are called rings.

By 1919 the volume of banding went beyond the capabilities of a few small ornithological organizations to handle. Canada and the United States agreed to adopt a common system under the control of U.S. Bureau of Biological Survey (now the U.S. Fish and Wildlife Service). The Bureau would issue banding permits and bands and receive and catalog all records into a retrieval system.

Today there are well over 10,000 banders in North America holding either a U.S. or canadian-issued permit. Over 2,000,000 birds are banded each year. When annual reports pour into the processing center, the workers check the records carefully for errors or discrepancies, punch the information onto cards and feed them into computer banks for future fast retrieval.

Note well IF YOU EVER FIND A DEAD BIRD WITH A BAND OR OTHER MARKERS, READ THE NUMBER CAREFULLY AND DESCRIBE OTHER MARKERS SUCH AS DYED WINGS, DYED TAILS OR BACKS. IF YOU WISH TO SEND THE BAND TO THE PROPER AUTHORITIES, YOU CAN REMOVE IT AND FLATTEN IT. WHEN SUBMITTING A REPORT ON A "RECOVERY", BE SURE TO INCLUDE YOUR OWN NAME AND ADDRESS, WHERE YOU FOUND BIRD, DATE, AND, IF KNOWN, THE CIRCUMSTANCES OF ITS DEATH, AND, OF COURSE, THE BAND NUMBER. SEND THIS INFORMATION TO

Bird Banding Laboratory
Patuxent Wildlife Research Refuge
Laurel, Maryland 20810

You will receive a neat certificate from the Laboratory informing you what kind of bird it was, when and where banded, and who banded it. The bander will also receive a "recovery" report containing the information you submitted.

Why Band Birds?

There are many reasons for banding birds and some of these will become evident in this paper. So that you can have the fun of making your own list of reasons, we have deliberately refrained from stating them at this point. You may also wish to do your own library research or dig into some of the references given in this paper to bring you up to date on some ingenious methods of marking birds such as use of tiny radio transmitters which enable scientists to track the birds. At Northern Illinois University, Professor William Southern of the Biology Department has used radio tracking of Bald Eagles and on gulls. A classic example of tracking a radio-banded bird by use of an airplane was undertaken by Frank Bellrose of the Illinois Natural History Survey which has offices in Urbana. You may wish to write the Survey and request a reprint of the report, or obtain a list of references on this research.

Banding at the Lorado Taft Field Campus ...

A bird banding station was started at Taft in June 1956 under a master permit issued to Professor Terwilliger of the Biology Department on the main campus of Northern Illinois University. Taft Campus, in March 1962 received its own master permit issued to Dr. Donald R. Hammerman. From 1956 to 1960, Dr. Hammerman supervised all the banding operation; then for the next three this task was assigned to Dr. Oswald Goering. From 1964 to the present (1974) the responsibility for the station and keeping all the records became the duty of Mr. D. E. Wade.

It is of interest that during six months of 1956, some 66 individual birds of ten kinds (species) were banded and 27 returned to the traps one or more times.

A summary of banding at Taft from 1956 through 1973 is shown in Table 1.

Table 1. Summary of Birds Banded At Taft, 1956 through 1973

(Note: The "Ret." column shows number of birds returning to traps one or more times after being banded.)

Common Name	No. Banded	Ret.	Common Name	No. Banded	Ret.
Slate-colored Junco (WR) *	258	52	Scarlet Tanager (SR)	6	0
Black-capped Chickadee (PR)	236	163	Cedar Waxwing (PR)	5	0
Downy Woodpecker (PR)	181	102	Brown Thrasher (SR)	4	0
Blue Jay (PR)	175	49	E. Wood Pewee (SR)	3	1
White-breasted Nuthatch (PR)	147	100	Oregon Junco (Occ. W)	3	2
Tufted Titmouse (PR)	145	81	Song Sparrow (PR)	3	0
Purple Finch (WR)	106	10	Black & White Warbler (Occ. SR) (PM)	2	0
American Goldfinch (PR)	46	1	Carolina Wren (PR)	2	0
Cardinal (PR)	39	10	Common Flicker (SR)	2	0
Evening Grosbeak (Occ. W)	36	2	Hermit Thrush (PM)	2	0
Hairy Woodpecker (PR)	30	17	Magnolia Warbler (PM)	2	0
Red-bellied Woodpecker (PR)	24	6	Red-eyed Vireo (SR)	2	0
White-throated Sparrow (PM)	24	0	Blue Grosbeak (Accid.)	1	0
House Wren (SR)	18	0	Field Sparrow (SR)	1	0
Eastern Phoebe (SR)	17	0	Great-crested Flycatcher (SR)	1	0
Brown-headed Cowbird (SR)	15	0	Ruby-throated Hummingbird (SR)	1	0
American Robin (SR)	12	0	Swainson's Thrush (PM)	1	0
Fox Sparrow (PM) (Occ. W)	12	0	Swamp Sparrow (SR)	1	0
Red-headed Woodpecker (PR)	11	2	Yellow-throated Vireo (SR)	1	0
Brown Creeper (WR)	8	2			
Baltimore Oriole (SR)	7	0			
Indigo Bunting (SR)	6	0			
Ruby-crowned Kinglet (PM)	2	0			
			Totals	1,594	600

* For (WR), etc. see p. 7

Banding operations at Taft are quite modest and perhaps, as will be explained, too simplified. However, the educational exposure to students, teachers and others using Taft is quite substantial. For example, we have estimated that over the past 17 years, about 20,000 persons have witnessed and discussed bird banding at Taft.

A highlight occasion occurred October 29 - 31, 1971, when Taft Campus hosted the annual meeting of the Inland Bird Banding Association. Some 150 banders from 15 Midwestern states and the national Bird Banding Laboratory at Laurel, Maryland attended. One ardent bander set up a score of mist nets and in four days banded over 200 birds and added five new species to the Taft records.

Traps Used ...

The primary trap used at Taft is the Potter Cell Trap. It has drop doors which fall when a bird enters and steps on a treadle platform. For two years, mist nets were used but were abandoned because of objections. They will probably be used again especially during the summer.

Mist nets, made of fine silk strands, were used in the past in Italy and Japan to capture small birds as food. Today the nets are made of fine strands of nylon and resemble enlarged volleyball nets and are strung between poles. The net cords are black and somewhat resemble a hairnet texture. When nets are properly placed against dark foliage background, the birds cannot detect them and fly into them and become entangled. Much care and skill is required to remove birds.

Trained netters working as teams in choice sites during peak migration periods can capture and band over 2,000 birds in two or three days.

When working with school children, as we do much of the year at Taft, the use of the two- or four-celled Potter traps seems suitable. Many children and adults have strong feelings when viewing a trapping operation. A bird in a cell trap seems to offer a less traumatic experience in contrast to birds entangled in a mist net.

Cell traps are baited with sunflower seeds. Mist nets require no baiting but are more demanding in frequency of visits and skill in removal of birds.

Record Keeping ...

At Taft the trapped birds either display a band or do not. Records are kept of all new bandings and retraps of previously banded birds. Information is entered on a Field Form and includes name of the bird, band number, sex, age, date of banding, and initials of responsible staff member. In some species the sex cannot be determined readily by external markings. Generally (at least at Taft) the age is not determined, although techniques exist for ageing in a limited way. Once correct identification has been made, the proper sized band is selected to fit neatly over the leg. Band numbers (new bands and on retraps) must be read carefully at least three times. Entries should be written neatly and legibly -- a 7 should look like 7. Figure 1 is a typed copy of a Field Form.

Figure 1

Monthly Bird-banding Record Sheet

TAFT STATION MONTHLY BIRD-BANDING RECORD SHEET

MONTH February YEAR 1972 SHEET NO. 1

(Note: Under date do not repeat Month and Year)
(Responsible staff should initial banding & retrap)

B I R D S N E W L Y B A N D E D

Band Number	Name of Bird	Age	Sex	Date (s)	Remarks
109-153541	W.B. Nuthatch	U *	U	23	DW
121-96499	B.C. Chickadee	U	U	24	DW
121-96500	B.C. Chickadee	U	U	24	DW
109-153542	Tufted Titmouse	U	U	24	DW
57-24618	Purple Finch	U	M **	24	DW
62-176681	Cardinal	U	M	25	DW

B I R D S B A N D E D P R E V I O U S L Y

Band Number	Name of Bird	Date	Remarks
109-153516	Tufted Titmouse	8,24	DW
32-106487	W.B. Nuthatch	9,17	DW, RV
109-153540	W.B. Nuthatch	17	Found dead in trap RV
121-94696	S.C. Junco	24	DW

*- U stands for unknown; **-M stands for male

Removal of birds from traps, selection of band sizes, and actual placement of bands on the birds, as well as control of the use of the traps and where placed, are the responsibility of Taft staff members. Nevertheless children and university students do assist in identification, reading and triple-checking band numbers, and recording information on Field Forms. Insistence on precise recording is a valuable lesson.

After the bird has been banded and all information correctly recorded, a bird can be passed to a child to hold momentarily before release. Birds such as the Cardinal or Blue Jay can clamp onto one's finger. If one is not expecting this, the reaction can be rather outstanding and sometimes a bit painful. Only the smaller birds are held by children, but some react to the gentle peck of a Black-capped Chickadee.

We insist on reading and recording the numbers on any trapped bird already carrying a band. The retrap offers a larger educational experience as the card files are searched to discover if it is a Taft band and when banded and the number of previous retraps. A master card file is kept on all birds banded. Periodically information from the Field Forms is transferred to the cards. Figure 2 is typed copy of the record for No. 28-126257, a White-breasted Nuthatch.

Figure 2 Master Card for No: 28-126257

Band No. 28-126257	White-breasted Nuthatch	Age	Sex
AOU No. 727	01-10-61	U	U

Retraps ...

1961 ...			1962 ...		
01-13*	10-04		01-01	04-10	09-11
01-16	10-23		01-05	04-11 (net)	09-14
02-07	10-24		01-12	05-08	09-26
02-09	10-26		02-26	05-17 (net)	10-01
02-13	11-07		03-02	06-01 (net)	10-03
02-21	11-12		03-02	06-24 (net)	10-10
05-02 (net)	11-17		03-07	07-05	10-15
06-22	11-28		03-16	07-12	10-17
07-12	12-01		03-23 (net)	08-15	10-19
	12-05		03-30	09-05	10-20
					10-20
					10-21
* (Month-day)					10-21

Number 28-126257 is at the top of the list at Taft to date for the most returns to the traps. A child named this individual, "Freddie the Freeloader."

* - The actual banding technique varies. At Taft we are now using special pliers which will open the band and close it neatly, without danger of overlapping.

Banding Schedules (Official Annual Reports) ...

In January following each calendar year it is necessary to submit a listing of all new banding for the year. This is done on an official form which is mailed to the Bird Banding Laboratory at Laurel, Md. The Return Records had also been sent on a printed form, but for the past three years the Laboratory has not required them. Taft station however, continues to keep annual summaries of retraps and many banders feel return data are a valuable part of a national system of banding. Probably the Laboratory will again request Return Records, but currently the Lab. is heavily loaded with accessioning of new bandings and answering requests for information on recoveries.

Banding Schedules, Return forms and the master cards can be examined at the Taft Station.

* * * * * * * * * *

Analysis of Taft Station Banding Records ...

The style of banding at Taft Campus is categorized among the more sophisticated banders as a "Backyard Operation." A style wherein there is a general lack of more precise information on sex, age, weight, measurements, eye color, color of inside of mouth, blood samples, external parasites, temperatures and moult patterns. Some of these observations are beyond the present skills or time of the staff at Taft, but surely weights and several key measurements can be obtained on each bird handled.

The research on the Taft bird-banding was very limited by a paucity of facts on each bird. However, some analyses were possible but have not been checked against statistical validity or significance. Table 1 (p.3) listed the kinds of birds and numbers trapped at Taft and their status in general way.

At any given locality birds can be accorded a "status". The birds at Taft --occurring regularly-- can be divided into four main categories:

Permanent Residents (PR)
Summer Resident only (SR)
Winter Residents only (WR)
Passage Migrants, spring and/or fall (PM)

Other categories Accidental or Rare are also used. Sometimes, for example, birds are blown great distances by a storm. In the spring of 1973, Mr. Wade observed a Black Vulture near Stillman Valley, Illinois. Sightings of the Black Vulture in northern Illinois must be considered very rare as there are no published records for the area. Some thirty years ago Cardinals, Carolina Wrens (see footnote), Mocking Birds, and Blue-gray Gnatcatchers were considered rare in northern Illinois and southern Wisconsin. Sightings in recent years have been frequent, especially for Cardinals which seems to be well established now as a Permanent Resident in the two states.

Most of the banding at Taft is done from September through April. Consequently very few of the Summer Residents (except those of a Permanent Residents status) are captured and banded. Year-round trapping should be conducted at Taft and mist nets should be considered for use during May to September.

Wade, Douglas E. "The Carolina Wren in Wisconsin." Wilson Bulletin, XLIX, 4, December 1937.

Although in Table 1 an effort was made to indicate status, the reader should be cautioned. It is possible for a given locale, such the Taft campus, to have its own "hard-core" of its Permanent Residents' population modified during the fall and spring migrations by birds of the same species which, if seen or trapped, could be listed as Permanent Residents. Some of these so-called PR species could also move into the area in the fall and remain during the winter, possibly attracted by bird-feeding trays on the Campus. Also, it is quite possible that some of the so-called PR birds can leave Taft in the fall and take up winter residence to the south. Vigorous "zone-style" banding at selected parts of North American would aid in unraveling this sort of possible movement of birds. At Taft, more rigorous trapping of a larger number during the summer months might reveal the more precise status of PR birds. In general birds will return to the vicinity of their birth and seek nesting territory there. Color banding of PR status birds in the summer would probably help clarify the true nature of these birds through the year.

How Far Do Permanent Residents Roam?

Using Taft as center, mobile banding stations can be set up at peripheral circles at various distances. Already a sub-station has been set up at the Wades' house, some one and a half miles southeast of Taft. One bird, a Tufted Titmouse, originally banded at Taft has been retrapped at the Wades and subsequently retrapped back at Taft.

In 1954 and for several years, Mrs. Vivian (Robert) Maxson ran a banding station at the Maxson Manor just southwest across Rock River from Taft. Birds from her station and from another station in Oregon, Illinois, two miles southwest of Taft, were retrapped at Taft.

One of our mystery birds is Band No. 110-161916, on a Tufted Titmouse: it is not a Taft Band. Prof. Malcolm Swan of the Taft staff caught it in a Potter trap on April 2, 1971. A request was sent to the Bird Banding Laboratory on this bird, but no answer. Then on April 6 and 7, 1974, a group of students, enrolled in Prof. William Southern's Ornithology course, Bi-Sci. 452, engaged in some mist-netting on the Taft Campus, under the direction of W. Guptill. No. 110-161916, a Tufted Titmouse, was captured; and again a request has gone forward to Laurel, Maryland for full information on this "foreigh return."

(See footnote on P. 14.)

Taft Birds Found Elsewhere . . .

Birds banded at Taft and recovered or retrapped elsewhere are few but exciting A Song Sparrow Banded October 31, 1971 was recovered March 11, 1972, about 15 miles south of Taft; an Evening Grosbeak banded January 17, 1962 was retrapped February 15, 1962, about 140 miles north near Portage, Wisconsin; and a Purple Finch banded February 13, 1969 was recovered near Hermann, Missouri on an unspecified day in March 1970. The distance from Taft to Hermann is estimated at 400 miles.

Mortality at a Banding Station . . .

Some birds banded at Taft have died at Taft. Those "recoveries" (the band is recovered), with suspected circumstances of death are shown in Table 2 (next page). Incidentally, once a band has been used on a bird, it is never placed on another bird - it is destroyed.

Table 2 Recovery Data of Birds Banded at Taft

Band No.	Species	Circumstance of Death
121-96448	American Goldfinch	found dead on campus
103-16524	Red eyed Vireo	" " " "
115-49571	Slate-colored Junco	" " " "
23-181310	Tufted Titmouse	" " " "
28-126210	" "	" " " "
32-106442	" "	found dead in trap
32-106446	" "	" " " "
32-106483	" "	" " " "
101-161892	" "	" " " "
109-153511	" "	" " " "
109-153514	" "	" " " "
23-181369	White-breasted Nuthatch	" " " "
23-181377	" " "	" " " "
23-181384	" " "	found dead on campus
32-106425	" " "	" " " "
32-106447	" " "	flew into window
107-07936	" " "	found dead in trap
101-161809	" " "	flew into window
101-161811	" " "	found dead in trap
101-161863	" " "	found dead on campus
109-153540	" " "	found dead in trap
24-58806	Black-capped Chickadee	" " " "
103-16583	" " "	found dead on campus
107-07938	" " "	found dead in trap
107-07943	" " "	found dead on campus
107-07947	" " "	found dead in trap
107-07948	" " "	" " " "
107-07997	" " "	found dead on campus
107-07997	" " "	" " " "
115-49520	" " "	found dead in trap
115-49558	" " "	" " " "
713-12430	Blue Jay	found dead on campus
20-187460	Downy Woodpecker	flew into window

Periodicity of Birds that Migrate . . .

The Taft data are not sufficient in volume to reveal patterns of bird migration during the year. However, Purple Finches have been banded in these months (the brackets include the number banded that month): January (5), February (49), March (32), April (18), and December (2). Purple Finches appear to be Winter Residents, but do wander, seeking food.

The Evening Grosbeak is another wanderer and during January, February, and March of 1962 a total of 36 was banded. The only other time for Evening Grosbeak banding at Taft, in 17 years, was in February 1969, with just one bird.

Does banding harm a bird?

This is a frequent question. If the band is of the proper size and placed on the leg carefully and fully closed, with no overlap, there is no apparent distress to the bird. A few larger birds, particularly the larger hawks, including Eagles, may remove a band. These birds have powerful bills. The larger bands are made stronger and there are special locking bands that make such removal more difficult. Bands do, with age, wear down and sometimes get quite thin and numbers hard to read. Badly work bands are removed and replaced with new ones. The badly worn band is then sent to Laurel where it receives special treatment which enables the technicians to read the numbers. Bands are light in weight and birds can carry them apparently with no discomfort.

Population Dynamics ...

Rigorous studies of animal populations fall outside the kind of programs offered at Taft Campus in the Department of Outdoor Teacher Education. Taft, however, could serve in part as a biological station for the University and thus encourage more sophisticated animal population studies at the locale.

Small animals (including small birds) are known to have rapid turnovers in population; i.e., most individuals do not live more than a few months beyond birth. If such a mortality did not exist, some species of small animals would soon be very crowded in available habitats which furnish amenities for life such as food and shelter.

Using the banding information at the Taft station, an analysis was made of the elapsed time between the date of banding and the last date when bird returned to a trap. These data are summarized in Table 3. (See next page)

From Table 3, one can see that there is a drastic fall-off of numbers being retrapped the second year (Months 12 through 24); and, after the second year (Months 24 through 36), the percentum of birds being retrapped falls even lower.

Although the volume of data is low, it is possible to speculate that there has been:

c. A definite die-off of birds, occurring largely in the first year;
b. A build-up of trap shyness wherein some birds would avoid traps after first time; netting would be less selective than cell traps, in picking up birds;
c. A movement out of area by some birds after initial trapping;
d. A trapping of migrant birds which do not follow the same routes each year and are consequently not susceptible to being picked up at fixed banding stations after initial trapping and banding;
e. A lack of recovery of bands from birds which have died away from the trapping vicinity. Small birds carrying bands can die elsewhere, or even in the station locale, and never be found.

Table 3. Yearly Percentum of Returns of Birds Banded at Taft

Species	Number Banded	Percentum of Returns Based On Twelve Month Periods								
		0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-103
		%	%	%	%	%	%	%	%	%
Black-capped Chickadee	236	73.3	13.6	6.8	4.2	1.3	0.4	0.0	0.0	0.0
Downy Woodpecker	181	76.8	13.2	4.0	2.2	0.6	1.7	0.6	1.1	0.0
Blue Jay	175	93.1	3.5	1.0	0.7	0.0	1.7	0.0	0.0	0.0
White-brested Nuthatch	147	75.5	15.7	4.0	3.4	0.0	0.7	0.0	0.7	0.0
Tufted Titmouse	145	74.5	13.8	5.5	3.5	1.4	1.4	0.0	0.0	0.0
Cardinal	29	89.7	7.7	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Hairy Woodpecker	30	73.4	10.0	0.0	10.0	3.3	3.3	0.0	0.0	0.0
Red-bellied Woodpecker	24	83.3	8.3	4.2	0.0	0.0	0.0	0.0	0.0	4.2

Note: For a very readable book on populations, suitable from Grade 6 and up, see: Mice, Moose and Men: How Their Populations Rise and Fall by Robert M. McClung. (Morrow, N.Y., 1973.)

For a more erudite and tremendous book on populations, see: Voles, Mice and Lemmings: Problems in Population Dynamics by Charles Elton. (Oxford at the Clarendon Press, N.Y., 1942.)

Longevity of Birds ...

Just how long do birds live? is an interesting question. At Taft, we can get some clues on this by figuring the elapsed time between initial banding date and last date returning to traps. Unless the techniques for ageing a bird are reliable and applied, or unless the date of hatching is known, there is some difficult in determining the age of a bird. Hence, most birds banded at Taft have "Age" designated as unknown (U).

To carry "U" as a constant in computer analyses does not offer much in forwarding studies of population turnover or in gaining information on life span of birds. Therefore, in the past three years, the Bird Banding Laboratory has devised a system of giving birds a common birthday, January 1. This is similar to the manner in which race horses are given a common birthday. Designations are used, such as HY (Hatching Year) and AHY (After Hatching Year). Such designations afford the computer more versatility for gaining information on time spans (life span of the bird).

A list of some of the longer elapsed time records is shown in Table 4.

Table 4. Longevity Indication of Some Taft-banded Birds

Black-capped Chickadee		
Band No. 24-58875	10-15-59/01-13-65	5 yrs. 2 mo. 29 da.
Blue Jay		
533-81403	07-14-56/06-25-62	5 yrs. 11 mo. 11 da.
533-81410	02-12-57/10-20-62	5 yrs. 8 mo. 8 da.
713-12440	08-06-63/02-15-69	5 yrs. 6 mo. 9 da.
Downy Woodpecker		
23-181395	01-11-62/01-04-70	7 yrs. 11 mo. 24 da.
23-181391	01-02-62/02-13-69	7 yrs. 1 mo. 11 da.
23-181349	02-14-57/05-21-63	6 yrs. 3 mo. 7 da.
23-181325	10-24-56/01-12-62	5 yrs. 3 mo. 19 da.
23-181322	10-23-56/01-02-62	5 yrs. 2 mo. 10 da.
23-181350	02-14-57/02-22-62	5 yrs. 0 mo. 8 da.
Hairy Woodpecker		
54-153346	12-08-60/04-14-66	5 yrs. 4 mo. 6 da.
Red-bellied Woodpecker		
522-89711	05-23-57/11-11-65	8 yrs. 5 mo. 19 da.
(Taft Station's oldest bird from banding records.		
Tufted Titmouse		
101-161850	12-05-68/04-06-74	5 yrs. 4 mo. 1 da.
23-181339	12-20-56/01-19-62	5 yrs. 0 mo. 30 da.
White-breasted Nuthatch		

Educational Implications ...

The total number of returns to traps by all birds trapped and banded at Taft was not tallied for the 17 years of operation. However, from an educational standpoint, this number is of great value. It does represent the extended opportunities to demonstrate and discuss trapping with children. The number is probably twice that of the total of all birds banded.

Many times a bird, after release from a trapping experience, will fly to a nearby perch and engage immediately in either "beak-wiping" or "feather ruffling." Such observations of behavior are used to introduce children and others to the art and science of animal behavior. The recording of such observations should be made a requirement and accorded a place on the Field Form or a Behavior Form sheet.

Banding activities observed by children do open the way to an interest in identification of birds, some aspects of life histories, certain aspects of ecology (inter-relationships to the environment and the birds' own kind), and management (applied ecology). These four major topics, which we call the BIG-FOUR, give the children some useful pegs on which to hang their thinking and future orderly development or acquisition of knowledge.

The concept of "Traps and Trapping" has been pursued at Taft in conjunction with bird-banding operations for the past seven years. It is a most enlightening spin-off from simply watching a demonstration of bird trapping and banding. This concept "package" is rather tremendous and we have arrived at a position at Taft that the concept behind trapping is one of the more important ones inherent to the progress of mankind over the ages -- a concept of equal importance and perhaps even more basic to those which brought on the development of the wheel, fire, and cutting tools. (The procedure and development of the concept package on traps and trapping will be the subject for another Taft Occasional Paper or publication elsewhere.)

Suggestions for Improvement of Bird Banding at Taft ...

Playing around with (researching) the banding records has led to some thoughts about how can banding operations be improved at Taft, especially in gaining more scientific evidence and stronger educational input? The suggestions are listed:

- Study a residential bird as an example of scientific work.
- Invite Dr. William Southern of the Biological Sciences Department of Northern Illinois University to give an annual workshop on Bird-Banding at Taft Campus.
- Require a Bird-banding short course for all graduate assistants working at Taft Campus.
- Invite Dr. Southern to bring his ornithology class to Taft periodically to engage in rigorous mist-netting, not only at Taft but at Pine Rock Nature Preserve, four miles east of Taft.
- Work out suitable use of color banding or color marking of birds and apply for permit to engage in this sort of banding activity

- θ Tighten up on getting all banded retraps read and recorded on Field Forms.
- θ Have Field Form include weight of bird and wing and length measurements. If special studies are made, other kinds of information can be gathered. Improve skills of staff in making age and sex determinations, wherein these are sure-fire and acceptable to the Bird Banding Laboratory.
- θ Set up adjunct banding stations on Taft Campus and outward, such as the Wades' home.
- θ Improve and standardize weather station, so that local weather data are scientifically valid. Study weather maps to gain relationship to movement or behavior of birds.
- θ Prepare publications on some of the outcomes of banding at Taft for Inland Bird Banding and Illinois Audubon Bulletin.
- θ Set up some suggested patterns for obtaining observations on bird behavior. Could these be entered on a special field form and made a part of the records of the Banding Station?
- θ Undertake sustained research to enhance the interpretive values of the Banding Station.*

Footnote on "Mystery Bird" Band No. 110-161916, from page 8

Tufted Titmouse Banded near Grand Detour, Ill. by Rev. M Reed of Dixon, January 23, 1971. Thought to be at least one year old when banded."

* See book, Interpreting Our Heritage by Freeman Tilden. (University of North Carolina Press, Chapel Hill, 1957 (also in revised edition, 1967).

BIBLIOGRAPHY ON BIRD-BANDING

(There is always a tendency for most of us in educational work to pad our bibliographies. The books and other items listed below are representative of a start on getting at the history, methods and facts of bird-banding. These publications should also open the door to some other exciting ways of observing and studying birds.)

Periodicals ...

Bird Banding
Inland Bird Banding News
American Birds
Wilson Bulletin
The Auk
The Condor
Natural History
Ontario Bird Banding (Canada)
Journal of Wildlife Management
Western Bird Banding Association News
The Blue Jay (Saskatchewan)
Misc. State Bird periodicals
Audubon Magazine (National)
The Living Bird (Annual-Cornell University)

Catalogs on Ornithological Publications ...

Windrift Prairie Shop
R.D. 2
Oregon, Illinois 61061

Books on Birds
Pierce Book Co.
Winthrop, Iowa 50682

The Audubon Bookcase
138 Grand Street
Croton-on-Hudson, N.Y. 10520

Buteo Books
P.O. Box 481
Vermillion, S. Dak. 57069

Books and Pamphlets and Articles

Baldwin, S. Prentiss. "Bird Banding By Systematic Trapping." Scientific Publications, Vol. 1, No. 5, pp. 125-168, 1931, Cleveland (Ohio) Museum of Natural History.

Broley, Myrtle J. Eagle Man. Pellegrini & Cudahy, N.Y. 1952. (Charles Broley banded 100's of Bald Eagles.)

Forbush, Edward H. and John B. May. Natural History of the Birds of Eastern and Central North America. Houghton Mifflin Co., Boston, 1939.

Hickey, Joseph J. A Guide to Bird Watching. Oxford University Press, New York, 1943. (This is a most stimulating book and opens up many avenues for investigating birds. Chapter 5 is an excellent discussion of bird banding.)

Lincoln, Frederick C. "A Decade of Bird Banding in America: A Review." From Smithsonian Report for 1932, pp. 327-351, Washington, D-C.: Smithsonian Institution.

Lorenz, Konrad Z. King Solomon's Ring: New Light On Animal Ways. (An exciting book; will open doors to observing behavior of animals.) Thomas Crowell Co., N.Y., 19[illegible].

BIBLIOGRAPHY OF BIRD-BANDING CONT.

Nelson, E.W. "Bird Banding, the Telltale of Migratory Flight." National Geographic, January, 1928, pp. 91-131.

Nice, Margaret Morse. The Watcher at the Nest. The Macmillan Co., N.Y., 1939. (Mrs. Nice is one of the greats in making careful, sustained observations of Birds.)

Peterson, Roger T. A Field Guide to the Birds. Houghton Mifflin, Boston, 1947. (One of the Better-known field guides.)

Roberts, Thomas S. A Manual for the Identification of the Birds of Minnesota and Neighboring States. University of Minnesota Press, Minneapolis, 1955. (An essential guide to identifying birds in the hand; very useful to banders.)

Smith, Ellen T. and William J. Beecher. Chicagoland Birds: Where and When to Find Them. Chicago Natural History Museum (Field Museum), Chicago, 1958. (A very useful booklet, with bar graphs showing year-round status of birds.)

Smith, Harry R. and Paul W. Parmalee. A Distributional Check List of the Birds of Illinois. Illinois State Museum, Springfield, 1955. (Check lists are valuable tools.)

Robbins, Chandler S. et al. Birds of North America. Golden Press, N.Y. 1966. (One of the better-known guides.)

Welty, J. Carl. The Life of Birds. W. B. Saunders, Philadelphia, 1962. (An excellent introduction to all aspects of bird life.)

Welty, Susan F. Birds With Bracelets: The Story of Bird-Banding. Prentice-Hall, Englewood Cliffs, N.J., 1965.

Wing, Leonard W. Natural History of Birds. Ronald Press, New York, 1956. (A penetrating study by one of the great teachers of natural history. Wing, now retired and bedridden by a stroke, was Aldo Leopold's first doctoral student at the University of Wisconsin.)

Wood, Merrill. A Bird-Bander's Guide to Determination of Age and Sex of Selected Species. Pennsylvania State University, College of Agriculture, College Station, 1969.

The Bird Banding Laboratory has issued a revised "Manual" for use of Licensed Banders. A copy is kept at Taft and can be examined on a non-removal basis.